Amendment to the Claims

1 (Previously Presented). A wavelength discovery method for network elements having an optical architecture, comprising the steps of:

generating a first wavelength topology map of wavelengths inserted in a first direction at each network element having an optical architecture;

generating a second wavelength topology map of wavelengths inserted in a second direction at each network element;

forwarding said first wavelength topology maps in said first direction to adjacent network elements over a dedicated overhead wavelength channel;

forwarding said second wavelength topology maps in said second direction to adjacent network elements over said dedicated overhead wavelength channel;

responsive to messaging via said dedicated overhead wavelength channel, updating each of said first and second topology maps at each of said network elements; and

wherein the step of updating each of said first and second topology maps further comprises determining passthrough wavelengths at each network element.

2 (Original). The method as recited in claim 1, wherein said overhead channel messaging is effectuated via a wavelength of a wavelength division multiplex (WDM) network.

3 (Canceled).

4 (Original). The method as recited in claim 1, wherein each of the steps of generating said first and second wavelength topology maps further comprises including wavelength source information.

5 (Original). The method as recited in claim 1, wherein said overhead channel comprises a dedicated Data Communications Channel (DCC) wavelength of a WDM network.

6 (Original). The method as recited in claim 5, further comprising the step of forwarding Operations, Administration, Maintenance and Provisioning (OAM&P) information over said DCC wavelength.

7 (Original). The method as recited in claim 1, further comprising the step of utilizing said updated first and second wavelength topology maps to provide a craft person an indication of said passthrough wavelengths in said network elements.

8 (Original). The method as recited in claim 1, further comprising the step of utilizing said updated first and second wavelength topology maps during maintenance operations on said network elements to determine protection switching.

9 (Original). The method as recited in claim 1, further comprising the step of utilizing said updated first and second wavelength topology maps to provide an indication of how said network elements affect each other during local maintenance operations.

10 (Previously Presented). A system for discovering wavelengths in a plurality of network elements having an optical architecture, comprising:

means for generating a first wavelength topology map of wavelengths inserted in a first direction at each network element;

means for generating a second wavelength topology map of wavelengths inserted in a second direction at each network element;

means for only forwarding said first wavelength topology maps in said first direction to adjacent network elements over a dedicated overhead wavelength channel;

means for only forwarding said second wavelength topology maps in said second direction to adjacent network elements over said dedicated overhead wavelength channel; and

means responsive to messaging via said dedicated overhead wavelength channel for updating each of said first and second topology maps at each of said network elements.

11 (Original). The system as recited in claim 10, wherein said overhead channel messaging is effectuated via an overhead wavelength of a wavelength division multiplex (WDM) network.

12 (Original). The system as recited in claim 10, wherein said dedicated overhead wavelength channel is operable to carry Operations, Administration, Maintenance and Provisioning (OAM&P) information.

13 (Original). The system as recited in claim 10, wherein said first wavelength topology map further comprises source information.

14 (Original). The system as recited in claim 10, wherein said second wavelength topology map further comprises source information.

15 (Original). The system as recited in claim 10, wherein said updated local first and second wavelength topology maps are operable to provide a craft person an indication of said passthrough wavelengths in said network elements.

16 (Original). The system as recited in claim 10, wherein said updated local first and second wavelength topology maps are utilized during maintenance operations on said network elements to determine protection switching.

17 (Original). The system as recited in claim 10, wherein said updated local first and second wavelength topology maps are operable to provide an indication of how said network elements affect each other during local maintenance operations.

18 (Original). An optical network comprising:

a first network element associated with said optical network, said first network element being operable to generate a wavelength topology map having a first map portion and a second map portion, wherein said first map portion associated with said first network element is specific to a first direction of said optical network and said second map portion associated with said first network element is specific to a second direction of said optical network;

a second network element associated with said optical network, said second network element being operable to generate a wavelength topology map having a first map portion and a second map portion, wherein said first map portion associated with said second network element is specific to said first direction of said optical network and said second map portion associated with said network element is specific to said second direction of said optical network; and

a dedicated overhead wavelength channel connecting said first network element to said second network element, said first network element being operable to transmit said first map portion to said second network element over said dedicated overhead wavelength channel,

wherein said second network element utilizes said first map portion associated with said first network element to update said first map portion associated with said second network element.

19 (Original). The optical network as recited in claim 18, wherein responsive to receiving said first map portion associated with said first network element said second network element forwards said updated first map portion associated with said second network element to an adjacent network element.

20 (Original). The optical network as recited in claim 18, wherein responsive to receiving said first map potion associated with said first network element said second network element transmits said second map portion associated with said second network element to said first network element.

21 (Original). The optical network as recited in claim 22, wherein said first network element utilizes said second map portion associated with said second network element to update said second map portion associated with said first network element.

22 (Original). The optical network as recited in claim 18, wherein said wavelength topology map associated with said second network element is utilized to determine passthrough wavelengths at said second network element.

23 (Original). The optical network as recited in claim 18, wherein said dedicated overhead wavelength channel is effectuated via an overhead wavelength of a wavelength division multiplex (WDM) network.

24 (Original). The optical network as recited in claim 18, wherein said dedicated overhead wavelength channel is operable to carry Operations, Administration, Maintenance and Provisioning (OAM&P) information.

25 (Original). The optical network as recited in claim 18, wherein said wavelength topology map associated with said second network element is utilized by a craft person performing maintenance operations at said second network element.

26 (Original). The optical network as recited in claim 18, wherein said wavelength topology map associated with said second network element is utilized by a Network Operations Center (NOC) during maintenance operations at said second network element.

27 (Original). The optical network as recited in claim 18, wherein said wavelength topology map associated with said second network element is utilized to provide an indication of how said second network element affects said first network element.